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TDS TELECOM

Government and Regulatory Affairs

DOCKET FILE COPY ORIGINAL

September 19, 1996

Ex Parte

William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, DC 20554

Re: CC Docket 96-45, In the Matter of Federal-State Joint Board on Universal Service

Dear Mr. Caton:

On September 18, 1996, Tom McCabe and the undersigned of TDS Telecom met with Julia Johnson of the Universal Service Joint Board to discuss concerns of rural LECs with respect to the Joint Board proceeding. Specifically, the TDS Telecom representatives asked that rural LECs: 1) not be forced to use proxies; 2) be allowed to disaggregate their high cost support to reflect cost differences within their serving areas; and, 3) be allowed to maintain USF and DEM weighting support and their current study areas. TDS Telecom representatives asked that adequate transition periods be given should the FCC implement rules that would cause significant shifts in cost recovery, and that industry be given sufficient time to quantify and evaluate impacts of proposed rules. Additionally, TDS Telecom representatives briefly described the types of services its companies provide to educational institutions.

Enclosed herewith are the documents provided to Ms. Johnson at yesterday's meeting. I have enclosed two copies of this notice and attachments in accordance with sections 1.1206(a)(1) and 1.1206(a)(2) of the Commission's rules. Please date stamp and return the provided copy in the enclosed self-addressed, stamped envelope.

Respectfully submitted,

Elizabeth H. Valinoti
Manager
External Relations

Attachments

cc: J. Johnson

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List A B C D E

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TDS TELECOM

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TDS TELECOM OVERVIEW

May 6, 1996

- Serving approximately 430,000 access lines in 28 states
- Operates 102 local exchange companies as of April 29, 1996
- Average number of access lines per company = 4,297
- Largest company serves 50,677 access lines (Tennessee Telephone);
  Smallest company serves 450 access lines (Danube Telephone)
- Average number of access lines per square mile = 10.5;
  Average RBOC access lines per square mile = 330
- Company with the greatest density = 328 access lines per square mile;
  Company with lowest density = 0.5 access lines per square mile
- 99.8% of access lines are digital

TDS TELECOM
Universal Service Key Points
for Consideration of the Federal-State Joint Board
Summer 1996

The Joint Board must recommend rules based on the universal service standards and principles set forth by Congress in the 1996 Act. Congress intended these provisions to ensure rural America of quality, affordable, evolving services, including access to advanced telecommunications and information services and reasonably comparable rural and urban services and rates.

1) Rural LECs' high cost recovery should not be based on proxies.

- So far no proxy has proven sufficiently accurate in predicting rural LECs' costs to avoid under- or over-compensation.
- Experimenting with proxies for rural LEC high cost recovery would conflict with the Act's mandate for sufficient, specific, and predictable federal high cost mechanisms used only to provide universal service.
- Efficient entry requires all ETCs in rural areas to be reimbursed out of a high cost fund based on actual costs.

2) Incumbent LECs should be allowed to disaggregate their high cost support to reflect cost differences within their serving areas.

- Because new entrants will naturally build their facilities only to the lowest cost subscribers, new entrants will receive a windfall of unnecessary support if they receive support based on the average cost of the incumbent LEC to serve the entire serving area with its own facilities.
- Disaggregation of the incumbent LEC's support will ensure that customers do not pay higher rates than necessary to achieve Congress' universal service and competition goals, and that the fund is properly targeted.
- Proxies may be an appropriate tool for rural LECs to disaggregate the total high cost support based on their actual costs.

TDS TELECOM
Universal Service Key Points
(continued)

3) USF, DEM weighting, and current study areas should all be maintained for rural LECs.

- Merging USF and DEM would increase bundling, reduce targeting, undermine sufficiency, increase intrastate costs, and impair rural infrastructure development.
- Facts in the record prove the traffic sensitivity and cost differences of rural LECs' switches.
- Forced study area consolidation would raise intrastate cost recovery burdens, ignore corporate boundaries, fail to mitigate high costs, and conflict with the statutory principle of sufficient federal cost recovery.

4) Any significant shifts in cost recovery will require adequate transition periods to mitigate adverse effects on ratepayers.

- The larger the proposed changes, the longer the transition needed for rural LECs.

5) The record must fully quantify and evaluate the impact of specific rules before they can be adopted as consistent with the 1996 Act.

- Unless specific rules are proposed between now and November 8, and fully explored in the record before the Joint Board's recommendation, rural LECs must have the opportunity to comment on the impact of recommended rules between November 8, 1996, and the May 8, 1997, deadline for FCC action.

Traffic Sensitivity of the Central Office Switching System

TDS Telecom met with FCC Bureau Chief Kenneth Moran on March 25 to discuss the traffic sensitivity of central office switching systems. As part of this meeting, Mr. Moran made a request for more data from TDS regarding the engineering of switches for TDS. This document describes the study that was undertaken by TDS as a result of that request and provides further evidence that central office switching systems are indeed a traffic sensitive resource.

In the TDS Telecom analysis, the 5ESS-2000 switching system was used as the representative switching platform. TDS used its knowledge and experience in engineering the 5ESS-2000 switch to produce a number of priced switch configurations with varying line usage and switch size parameters. In all, twenty-five (25) separate switch engineering runs were made varying switch access line size and usage per line. Access line size refers to the number of physical lines terminated on the switching system. In the TDS analysis, we chose switch sizes of one thousand (1000), five thousand (5000), ten thousand (10,000), twenty thousand (20,000) and fifty thousand (50,000) to get a view across all typical deployments of the 5ESS-2000 switch. In the territories serviced by TDS, however, the actual switch sizes deployed range from 19 lines (not a 5ESS-2000 switch) to 16,919 with an average of 1,354 access lines per switch. (It is our understanding that the average RBOC switch size is around 11,000 access lines.) Usage per line refers to average traffic generated per line per hour measured in one hundred call seconds (CCS). Again, we picked representative usage levels to get a view across typical switch deployments. We chose 2 CCS as the lowest usage line, 4 CCS as the traditional residential line, 6 CCS as the traditional business line, 10 CCS as a high-usage business or Internet access line, and 36 CCS as a dedicated line. Each of these line usage types co-exist within the same switching system but we have made the simplifying assumption that all lines on the switch have the same usage.

The following table summarizes the TDS study. Each element of this table reflects the actual 5ESS-2000 switching system cost per line, normalized against an arbitrary point to eliminate pricing effects such as vendor volume discounts and/or decreasing electronic costs over time. In this instance, the normalization point is the 50,000 access line switch engineered at 2 CCS per line and so this point is arbitrarily set to 1.0. All other cost per line price points are given relative to this point in the table. By picking this as the normalization point, we can easily see why support mechanisms are required for companies deploying small exchanges. For example, at 2 CCS per line, the switching costs per line are *9.6 times* greater for a 1000 line access switch compared to a 50,000 line access switch. Similarly, it is demonstrated that per line switching costs are *4.2 times* greater for a high usage business line (10 CCS) than for a low usage residential line (2 CCS) at the 50,000 access line switch size.

Access Lines	2 CCS	4 CCS	6 CCS	10 CCS	36 CCS
1000	9.6	9.9	10.9	13.2	15.2
5000	2.6	2.8	3.1	5.8	8.0
10000	1.8	1.9	2.2	4.9	7.0
20000	1.3	1.4	1.7	4.4	6.6
50000	1.0	1.2	1.4	4.2	6.3

Table 1: Cost/Line Normalized Against Access Line Size and Line Usage

In order to more clearly show the traffic sensitive nature of switching, we have reformatted the data in Table 1. The traffic sensitive nature of switching costs is better demonstrated taking the percent change within a given access line switch size as shown in Table 2. In this table, we have normalized all per line switching costs at the 2 CCS usage level and have shown relative cost within an access line switching system size. This analysis shows, for example, that the cost per line for the high usage line (10 CCS) is 2.2 times that of the low usage (2 CCS) line at the 5000 access line switch size. It is interesting to note that the larger the switch size, the greater the sensitivity to traffic usage. However, even in the smallest switch configuration, the cost per line can vary as much as 59% depending on the usage of the lines.

Access Lines	2 CCS	4 CCS	6 CCS	10 CCS	36 CCS
1000	1.00	1.03	1.14	1.38	1.59
5000	1.00	1.07	1.18	2.20	3.03
10000	1.00	1.09	1.23	2.77	3.98
20000	1.00	1.10	1.31	3.44	5.08
50000	1.00	1.17	1.41	4.19	6.31

Table 2: Cost/Line Normalized Against Line Usage

In summary, TDS has conducted a study to provide data regarding the traffic sensitivity of central office switching resources. This data conclusively shows that a substantial portion of switching costs are indeed traffic sensitive, particularly when high usage business or Internet access lines are considered. TDS believes that support mechanisms should accurately reflect the underlying costs of the resource supported. TDS believes that combining traffic sensitive support mechanisms with non-traffic sensitive support mechanisms will result in a support mechanism which would be grossly inaccurate. We strongly urge the Commission to consider this study performed by TDS before taking action regarding any changes to existing support mechanisms.

TDS TELECOM Educational Services and Programs

Services

- **Internet Service** - In areas where we offer Internet access, schools can have free access to the Internet for six months. After this period, we offer discounted rates for Internet accounts and schools can even have a free World Wide Web Home Page with a three-year contract.

- **Structured Wiring for Schools** - Local operating companies are looking at new ways to help schools. To assist with growing and changing data needs, TDS TELECOM provides network planning, design, and cable construction for schools.

- **Distance Learning** - TDS TELECOM is committed to education in the communities we provide service. To show this commitment, we pledge to place fiber to our schools. We actively respond to requests about distance learning and provide technical assistance to schools with distance learning needs. Often times, we donate labor and materials for these programs.

  In addition, we keep our schools informed of the grant and loan opportunities that are available for distance learning.

Sponsorship of Education Programs

- **Scholarship Programs** - Because we have a local presence and are part of the communities we serve, we have a vested interest in education. Many TDS TELECOM local companies provide scholarships for high school students continuing their education. Scholarship awards are typically based on grade point average.

- **Essay Contest** - Junior and senior high school students can test their critical thinking, investigative, and creativity skills as they write essays to compete for a scholarship toward their advanced education. We have three levels of competition. First, students submit their essays at the local company level to win $200. The local winners then compete at the regional level for a $1,500 scholarship. Four regional winners then vie for the national award of a $5000 scholarship. The national winner's sponsor or teacher receives $500 which can be applied toward educational materials for his/her classroom.

- **Mentorship Programs** - As volunteers for a Wisconsin mentorship program, TDS TELECOM employees teach students about work in the telecommunications field including the training/education needed, day-to-day job tasks, and the outlook for the position in the future. At the same time, students learn to identify classroom skills they will use in their careers.

We have another mentorship program in the northeastern part of the country that has been a success. The company employs an at-risk student for one school year. This student will go through a complete interview. Along with learning about the telecommunications industry, the student receives tutoring for classes and performs community service. This is a great learning experience for the student, and the company personnel benefit in knowing that they have helped to make a difference in a student's life.

- **Tutoring Programs** - A tutoring program is in place where students receive help from TDS TELECOM employees with homework or to prepare for an exam. Employees go to the student's school to work with the student during school hours.

- **Mock Interviews** - Some of our company managers participate in high school and vocational college programs that bring in community leaders to help students prepare for job interviews.

Pilot Programs

- **Cornerstone ISDN Program** - In California, TDS TELECOM will be working with schools to provide ISDN lines with no installation or usage charges for the first year. After the first year, schools will receive a discounted rate for these high-speed transmission lines. This will be a great opportunity for teachers and students to benefit from the advanced applications of ISDN.

RICH RYGH/THE CAPITAL TIMES

Jacourtney Ticey explores the Internet at the Vera Court Neighborhood Center.

Vera Court, meet Internet

By Gail Perry-Daniels
The Capital Times

GOOD WORKS

After just two days, 11-year-old Jacourtney Ticey felt confident enough about his Internet skills that he began assisting others.

"I've been looking at things like NBA news to find out about basketball players, looking at books and all kinds of other things," said Jacourtney, who uses the Internet after school at the Vera Court Neighborhood Center.

Having access to the Net will open up a whole new world for the youths in this neighborhood, said Johnny Winston Jr., the center's director.

On Jan. 19, TDSNET Internet Services, a Madison-based provider, opened a free on-ramp to the information highway for the Vera Court neighborhood at its community center, 614 Vera Court.

TDSNET is a subsidiary of TDS Telecom, which is based in Madison. The company offers Internet service in 10 locations across the country, including Madison.

Joleen Taliaferro, a Vera Court resident, said she tries to use the Internet as often as she can. Initially Taliaferro started coming to the center to learn typing.

On Thursday, she cruised the Net to find out information about a televised interview with O.J. Simpson that was aired Wednesday night.

"I have learned more about computers since I've been using the Internet. It's like a new game at times, learning all of the different things you can do," Taliaferro said.

TDS sales manager Garry Burman said it was only a matter of days after the center inquired about getting an Internet link before the company made an offer to donate the service.

"It's important to us to contribute to the communities we serve by providing the opportunity to access the Internet. We are creating educational and employment opportunities to residents in ways that were not available only a few years ago," Burman said.

On Thursday, Burman discussed with Winston the possibility of developing a home page for the center.

The commercial cost of receiving the Internet service and a homepage is as much as $30 a month.

"We are so fortunate to have this opportunity. Computer technology and the access to Internet strengthens self-esteem, encourages empowerment, ownership, and teaches skills that will help our youth and adults to thrive — not merely survive," Winston said.

Winston added that the center is a step closer to sharing President Clinton's wish, expressed in his State of the Union address, to have Internet access attainable by all.

In the computer lab, equipment users must pass a simple test before they can begin using the equipment.

"We want the user to know what a monitor is, what a mouse is, what a CD-ROM is," Winston said.

The center's eight computers were donated by American Family Insurance.

Once known as one of Madison's most crime-ridden neighborhoods, Vera Court, on the city's north side, has seen vast improvements with the help of property owners, management, neighborhood residents, volunteers, social service agencies and businesses, Winston said.

HOW YOUR SCHOOL CAN USE THE INTERNET.

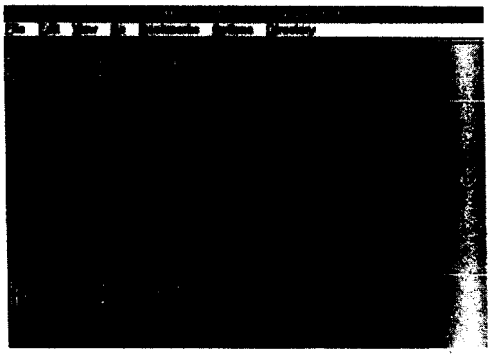
As a powerful resource tool, the Internet gives students and staff access to worldwide sources of information. This virtual treasure chest includes hundreds of databases, libraries, periodicals, and more.

Access to Internet resources can be especially important where students may not have a larger local library available.

Teachers can also use the Internet for research, lesson plan development, and communication with colleagues.

In addition, Internet access can:

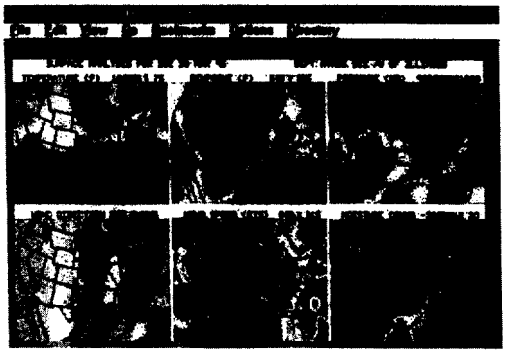
- Facilitate communications between teachers, parents and students
- Enhance remote teaching
- Provide discussion forums for educational subjects
- Supply detailed description of colleges for interested high school students



How TDSNET will provide Internet to your school

Many schools now have computers in each classroom in addition to a computer lab. With this in mind, we have developed the following price structure:

Contact your TDSNET representative for details. Call 1-800-358-3648, or e-mail us at info@tdsnet.com.



TDSNET Education Discount Package

Dial-up 28.8k	Cost Per Account *	Cost Per Sub-Account
1-25 Master Accts	$17.00/mo.	$4.95/mo.
26 + Master Accts	$15.95/mo.	$4.95/mo.

**may be billed annually*

In order for students or faculty to receive their individual e-mail, a particular computer must be designated as their Internet e-mail site. Most schools recommend each home room as their Internet e-mail site.

Free Software

Internet software is included for Windows 3.1, Windows 95 and Mac System 7.5. To block sexually explicit material on the Net, Surf Watch is available for $39.95.

World Wide Web Home Page

TDSNET will provide up to 10MB of free WWW storage for schools that sign up for a three-year contract and have a minimum of five master accounts.

TDSNET provides complete access to the Internet.

Dial-up Access Service from TDSNET connects you directly to all of the Internet's worldwide resources. Your service provides PPP (Point-to-Point Protocol), the most popular method of exchanging packets of data over the network. With the software provided by TDSNET you'll have access to the World Wide Web, email, and newsgroups. The software can be used on computers running Windows 3.1, Windows 95, or Mac System 7.5 or better.

Support Desk

Many on-line service providers take short-cuts by not having enough support personnel available. Providing excellent support is one of our main objectives. Our help desk is available 9 am - 11 pm EST Monday through Friday and 10 am - 4 pm EST Saturdays.

Excellent Engineering

TDSNET's parent company is one of the nation's largest telecommunication firms with years of telephone, paging, and cellular experience. This experience has been used in designing the TDSNET network and monitoring it 24 hours a day, 7 days a week. Having enough phone lines in place and providing fast connections for World Wide Web downloads is a critical advantage of the TDSNET service.

We believe the Internet will continue to evolve with technological improvements. TDSNET has the resources and staying power to continue to provide our customers with Internet enhancements as they become available.

Internet For the Family

Internet access can benefit the entire family. For adults, it provides a vast amount of recreational information, stock prices, daily national and world news, travel information, shopping, and email to communicate with family, friends and collegues. For children, the Internet provides a world of educational opportunities to assist learning in all subject areas.

TDSNET Pricing

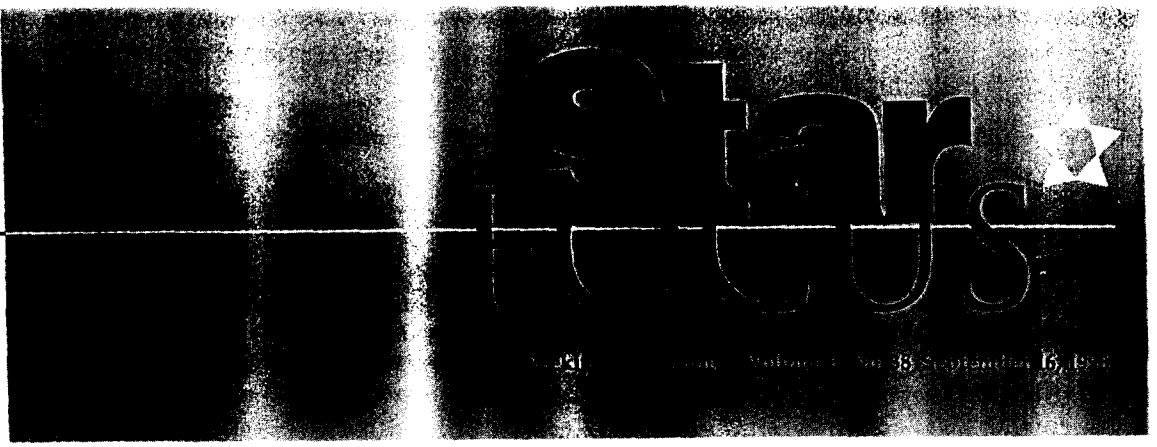
TDSNET provides flat-rated pricing for unlimited* 28.8k dial-up access. There are no setup or activation fees. We also have a Corporate billing option for businesses and educational institutions.

Service	Pricing
28.8k dial-up	$21.95 billed monthly *or* $19.95 billed quarterly ($59.85)

Contact your TDSNET representative for details. Call 1-800-358-3648, or email: info@tds.net.

*unlimited dial-up access should not be construed to mean 24-hour dedicated connections.

TDS TELECOM



Distance Learning update

On September 4 at 8:38 a.m., the culmination of a six-month project was realized at the Port Byron Central School in New York with the first class of the Cayuga-Onondaga Distance Learning Network. To the north, students at the Edwards-Knox School were experiencing this new way of learning as part of the St. Lewis-Lawrence Distance Learning Network. These projects represent two of TDS TELECOM's most recent efforts to promote distance learning in the communities we serve.

In K-12 schools, distance learning is commonly implemented as a specialized form of video-conferencing and is used to bring together geographically disbursed groups of students and teachers. Distance learning is an effective way of providing enriched curriculum, including advanced placement classes, to smaller school systems. The students in Edwards and Port Byron have access to advanced classes in French, Spanish, American History, Biology and Physics over the distance learning network.

The state-of-the-art networks supporting these schools include two-way fiber-optic trunking between the schools and high-quality digital video codecs (for analog to digital coding). Because both telephone companies anticipated their school's needs for advanced services, much of the fiber infrastructure was already in place. Service was available within days of receiving the codecs and fiber transceivers due to quick learning and tenacity on the part of the TDS TELECOM technicians in **Edwards** and **Port Byron.**

"Linking students and teachers over an interactive video network can enable schools to overcome a number of limitations and will open up many opportunities for their students," said **Andy McAdoo**, TDS TELECOM company manager at the Edwards Office. **Alan Weston**, TDS TELECOM company manager at the Port Byron Office added, "The bottom line to all this was to observe the students in different classrooms located miles apart. They're now learning something that was previously unavailable to them."

Both projects were awarded based on a competitive bid and multi-year contract prepared by **Marianne Paker**, product manager of Distance Learning, in the Emerging Applications Group. Marianne received excellent support from **Kris Thompson** and **Darcy Hackel** of State Regulatory Affairs in preparing pricing for the proposals.

For more information on distance learning please contact Marianne Paker at (608) 845-4329.✦